

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of  
NAKAMURA et al

Serial No. 10/801,038

Filed: March 16, 2004

For: NITRIDE SEMICONDUCTOR DEVICE



Atty. Ref.: 160-410

TC/A.U.:

Examiner:

\* \* \* \* \*

April 30, 2004

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**INFORMATION DISCLOSURE STATEMENT**

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith. It is further understood that the Examiner will consider information that had been cited by or submitted to the U.S. Patent and Trademark Office in a prior application relied on under 35 U.S.C. § 120. 1138 OG 37, 38 (May 19, 1992).

Applicants have checked the appropriate boxes below.

1. ☒ This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No statement under 37 C.F.R. § 1.97(e) or fee is required. In the event, a first Office Action has been mailed prior to filing of the present Information Disclosure Statement, the Office is requested to treat the present paper s a submission under 37 C.F.R. § 1.97(c) and charge the undersigned's Deposit Account No. 14-1140 for the fee required by 37 C.F.R. § 1.17(p). The present paper is submitted in duplicate for this purpose.

2. ☐ This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.

- a. ☐ I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. ☐ I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- c. ☐ Attached is our Check No. in the amount of \$ in payment of the fee under 37 C.F.R. § 1.17(p).

3. ☐ This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. It is hereby requested that the Information Disclosure Statement be considered. Attached is our Check No. in the amount of \$ in payment of the fee under 37 C.F.R. § 1.17(i).

- a. ☐ I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. ☐ I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
4. ☐ Relevance of the non-English language document(s) is discussed in the present specification.
5. ☐ The document(s) was/were cited in a corresponding foreign application. An English language version of the foreign search report is attached for the Examiner's information.
6. ☐ A concise explanation of the relevance of the non-English language document(s) appears below:
7. ☐ The Examiner's attention is directed to co-pending U.S. Patent Application No. , filed , (copy attached) which is directed to related technical subject matter. The identification of this U.S. Patent Application is not to be construed as a waiver of secrecy as to that application now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited application and the art cited therein during examination.

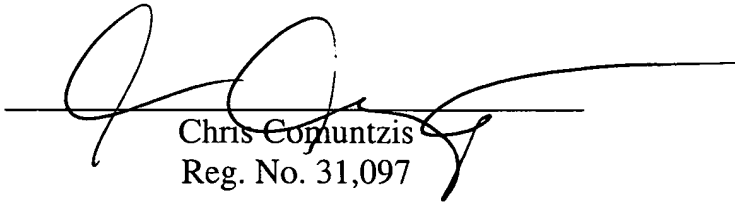
It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and to indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 14-1140 referencing docket number 160-410.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_

  
Chris Comuntzis  
Reg. No. 31,097

CC:lmr  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

INFORMATION DISCLOSURE  
CITATION

(Use several sheets if necessary)

Atty. Docket No.

160-410

Applicant

NAKAMURA et al.

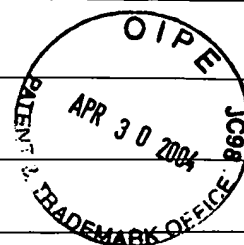
Filing Date

March 16, 2004

Serial No.

10/801,038

TC/A.U.



## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,793,054	08/1998	NIDO			

## FOREIGN PATENT DOCUMENTS

							TRANSLATION	
		DOCUMENT	DATE	COUNTRY	CLASS	SUBCLASS	YES	NO
		JP 6-164085	06/1994	JAPAN			ABSTRACT	
		JP 6-268259	09/1994	JAPAN			ABSTRACT	
		JP 6-268257	09/1994	JAPAN			ABSTRACT	
		JP 7-249795	09/1995	JAPAN			ABSTRACT	
		JP 8-070139	03/1996	JAPAN			ABSTRACT	
		JP 9-191160	07/1997	JAPAN			ABSTRACT	
		JP 7-235729	09/1995	JAPAN			ABSTRACT	
		JP 9-148247	06/1997	JAPAN			ABSTRACT	
		JP 9-148678	06/1997	JAPAN			ABSTRACT	
		JP 6-164055	06/1994	JAPAN			ABSTRACT	
		JP 9-116225	05/1997	JAPAN			ABSTRACT	
		JP 8-064910	03/1996	JAPAN			ABSTRACT	
		JP 8-116128	05/1996	JAPAN			ABSTRACT	
		JP 9-129925	05/1997	JAPAN			ABSTRACT	
		JP 8-316581	11/1996	JAPAN			ABSTRACT	
		JP 9-129929	05/1997	JAPAN			X	
		805500 A1	11/1997	EP			X	
		JP 9-008412	01/1997	JAPAN				X

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

AKASAKI et al., "Stimulated Emission by Current Injection from an AlGaIn/GaN/GaInN Quantum Well Device," Jpn. J. Appl. Phys., Vol. 34 (1995), pp. L1517-L1519
NAKAMURA et al., "High-power InGaN Single-Quantum-Well-Structure Blue and Violet Light-Emitting Diodes," Appl. Phys. Lett., Vol. 67, No. 13 (1995), pp. 1868-1870
NAKAMURA et al., "Candela-Class High-Brightness InGaN/AlGaIn Double-Heterostructure Blue-Light-Emitting Diodes," Appl. Phys. Lett. Vol. 63, No. 13 (1994), pp. 1687-1689
NARUKAWA et al., "Recombination Dynamics of InGaN Quantum Wells by Time-Resolved Photoluminescence," Technical Report of the Institute of Electronics, Information and Communication Engineers (Oct. 1996) (Japan), pp. 81-88
WAKAHARA et al., "Growth of GaInN Alloy Layer and Its Composition Inhomogeneity," Technical Report of the Institute of Electronics, Information and Communication Engineers (Oct. 1996) (Japan), pp. 15-20
NAKAMORI, T., "Unveiling the Structure of Pulse-Oscillate GaN Blue-Violet Semiconductor Laser," Nikkei Electronics (Jan. 1996) (Japan) No. 653, pp. 13-15
NAKAMURA, S., "Development of Blue Device in Final Stage," Electronics (Feb. 1996) (Japan), pp. 1-3
NAKAMURA, S., "Latest Progress in Nitride-Based Blue/Green LED and Semiconductor Laser," International Forum "Blue Light-Emission" Project of Hoso-Bunka Foundation, Inc. (May 1996) (Japan) pp. 53-60.

*Examiner	Date Considered
-----------	-----------------

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.